Postal Regulatory Commission
Submitted 7/22/2022 2:05:02 PM
Filing ID: 122350
Accepted 7/22/2022

BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, D.C. 20268–0001

PERIODIC REPORTING (PROPOSAL TWO)	Docket No. RM2022-8

RESPONSES OF THE UNITED STATES POSTAL SERVICE
TO QUESTIONS 1-5 OF CHAIRMAN'S INFORMATION REQUEST NO. 1
(July 22, 2022)

The United States Postal Service hereby provides its responses to the above listed questions of Chairman's Information Request No. 1, issued July 15, 2022. The questions are stated verbatim and followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorney:

_____
Eric P. Koetting

475 L'Enfant Plaza West, S.W.
Washington, D.C. 20260-1137
(202) 277-6333
eric.p.koetting@usps.gov
July 22, 2022

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

1. Please refer to the following three statements. In Docket No. RM2020-2, the Commission stated that "[i]n particular, future proposals to update and improve the variabilities for calculating attributable Postmaster costs should demonstrate by means of a more rigorous examination the validity of the assumption that [Work Service Credits (WSCs)] vary in proportion to volume or explain why such a more rigorous examination is unnecessary."[1] The Bradley Study states that "[t]o investigate the empirical validity of that assumption, one must investigate how Work Service Credits are determined for an individual office and attempt to ascertain what role volume plays in that determination." Bradley Study at 33. The Bradley Study further states that some of the factors which determine service credits, such as delivery points, do not appear to relate to volume. *Id.* at 37. The Bradley Study additionally states that "[i]nitial research into the potential relationship between volume and WSCs has shown it to be complex, with a variety of facets and not easily characterized. Additional future research is required to further understand and measure that relationship." *Id.*

a. Please confirm that Proposal Two relies upon an assumption of proportionality between volume and WSCs.

   i. If confirmed, please address the following two subparts:

      1. Explain how changes in the veracity of this assumption would affect the accuracy of Proposal Two.

      2. Provide a mathematical proof of the result. If the Postal Service asserts that doing so is not possible, please explain.

   ii. If not confirmed, please explain whether Proposal Two relies upon any assumption of relationship between volume and WSCs.

b. Please confirm that the Postal Service's "[i]nitial research" indicates that a more rigorous examination of the proportionality assumption is necessary.

   i. If confirmed, please explain why the Postal Service did not comply with Order No. 5932's instruction referenced above to complete a rigorous examination of the validity of this assumption before submitting Proposal Two.

   ii. If not confirmed, please explain if the Postal Service takes the position that its analysis complies with Order No. 5932's instruction referenced above.

c. Please identify the latest, relevant weights for the various factors underlying the WSC calculation.

---

[1] Docket No. RM2020-2, Order on Analytical Principles Used in Period Reporting (Proposal Ten), July 8, 2021, at 14 (Order No. 5932).

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

d. Please confirm that these weights identified in response to subpart 1.c. have not changed since the issuance of Order No. 5932. If not confirmed, please explain the nature and bases for the changes.

e. Please provide empirical measures of the magnitude of the influence of the various factors that influence the WSC calculation. If the Postal Service asserts that doing so is not possible, please explain.

f. Please confirm that inputs to the WSC calculation that appear to be non-volume variable (*e.g.*, delivery points) significantly influence the WSC calculation.

   i. If confirmed, please address the following two subparts:

      1. Explain if the influence of non-volume-variable factors in the WSC calculation would suggest that WSCs do not vary fully proportionally with volume.

      2. Provide the Postal Service's best estimate as to the magnitude of the variability. If the Postal Service asserts that doing so is not possible, please explain.

   ii. If not confirmed, please explain.

g. Please confirm that the Postal Service has the data readily available to empirically estimate WSC volume variabilities for a large sample of Post Offices.

   i. If confirmed, please identify the location(s) of such data with references to any relevant dockets and/or worksheets.

   ii. If not confirmed, please explain which data would need to be developed and quantify the time and cost associated with such development.

RESPONSE:

a.-b. Many parts of the established Commission methodology for finding attributable costs rely upon a two-step process. One of the steps relates responses in cost to changes in a cost driver, and the other step relates responses in the cost driver to changes in volume. The established methodology for calculating attributable Postmaster costs relies upon this two-step process, in which the first step links changes in cost to

changes in Work Service Credits (WSCs), and the second step links changes in WSCs to changes in volume. This second step in the established methodology is made through an assumption that changes in WSCs are proportional to changes in volume.

Proposal Two attempts to update and improve the linkage between Postmaster costs and WSCs, but does not attempt to change the established assumption of proportionality between WSCs and volume. As requested by the Commission, the Postal Service investigated the possibility of empirically testing that assumption, but found that such an effort could not be completed in a timely manner because there is neither a straightforward mathematical linkage between WSCs and volume that could be exploited for calculating a variability, nor a Postmaster-related volume data set that would support empirical estimation of the variability.[2]

The development of attributable costs for Postmasters thus directly parallels the development of attributable costs for purchased highway transportation. That costing methodology also depends upon a two-step process, with the first step measuring the relationship between costs and cubic foot-miles, and the second step measuring the relationship between cubic foot-miles and transported volume. In Docket No. R87-1 the Postal Service was able to construct a highway contract dataset to estimate the variability between cost and cubic foot-miles, while maintaining the established

[2] For example, a post office's WSCs depend upon a measure of its revenue, not its volume. To measure the relationship between WSCs and volume would thus require studying and measuring the relationship between post offices' revenue and their volumes. There currently are no data on post offices' volumes.

assumption of proportionality between cubic foot-miles and volume. Again, in Docket No. R97-1, the Postal Service presented, and the Commission accepted, updated variabilities for the cost-to-cubic foot-miles linkage, while maintaining the assumption of proportionality between cubic foot-miles and volume. Due to a change in the structure of purchased highway transportation contracts, the cost-to-cubic foot-miles variability was again updated in Docket No. R2000-1, while maintaining the assumption of proportionality between cubic foot-miles and volume. More recently, the Postal Service presented, and the Commission accepted, updated cost-to-cubic foot-mile variabilities in Docket No. RM2014-6, without adjusting the proportionality assumption. Subsequent to that docket, the development of a purchased highway transportation volume dataset (using TRACS data) permitted the estimation of the second variability, between cubic foot-miles and transportation volume. This led to the Postal Service presenting, and the Commission accepting, a cubic foot-miles-to-volume variability in Docket No. RM2016-12. In sum, the Postal Service proposed, and the Commission accepted, in a variety of proceedings, updating the first variability in the two-step process without addressing the second variability until a suitable methodology and dataset were developed.

Empirical estimation of the variability between WSCs and volume would require a measure of volume relevant for Postmaster activities. There currently is no operational data system that measures Postmaster volumes. Developing such a dataset, if possible, would thus require, among other things, identifying what types of volume should be measured, designing a method of volume measurement, planning a testing strategy, securing union approval, obtaining resources to implement such a study,

implementing a beta test, revising the study methodology, launching the actual study, and collecting and evaluating the data. The field study would then need to be followed by designing and implementing an empirical study of the collected data. This type of effort is typically multi-year and quite expensive, and even then, may not produce an empirical analysis that meets the Commission's high standards.

Given the lack of Postmaster volume data, the Postal Service decided to follow the approach taken in purchased highway transportation, in which the variability between costs and the cost driver was updated and refined, while research on the feasibility of updating the variability between the cost driver and volume proceeded. This decision is further justified by the fact, demonstrated next, that a reduction in the assumed WSC-to-volume variability is unlikely to have a large impact on attributable Postmaster costs per piece.

The Proposal Two cost-to-WSC variability is 3.03 percent, and the associated (piggybacked) cost per piece for market dominant products is $0.0003. For competitive products, it is $0.0041. If the WSC-to-volume variability were, for example, estimated to be 75 percent, then the overall variability would be 2.27 percent, a reduction of less than one percentage point.[3] The unit Postmaster cost per piece for market dominant products would fall to $0.0002, a decline of $0.0001. For competitive products, the unit cost per piece would fall to $0.0031, a decline of $0.001.

---

[3] In the two-step methodology, the overall variability is the product of the two, individual step variabilities. Thus, with a hypothetical 75 percent WSC-to-cost variability, the overall variability would be 0.0303*0.75 = 0.0227.

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

c. Below is a list of Postmaster activities and their weights used in calculating WSCs. In addition, as explained in the Bradley Study, there may be adjustments to a post office's WSCs if it performs mail processing, or for possible seasonal variations.[4]

Activity	Weight
General delivery families served	1
Post Office boxes rented and "no fee" boxes	1
Total possible city deliveries	1.33
Administrative rural boxes served	1
Intermediate rural boxes served	0.7
Administrative responsibility for intermediate rural boxes for other offices	0.3
Administrative highway contract boxes served	1
Intermediate highway contract routes served	0.7
Administrative responsibility for intermediate highway contract boxes for other offices	0.3
First 25 revenue units	1
Next 275 revenue units	0.5
Next 700 revenue units	0.25
Next 5000 revenue units	0.1
Balance of revenue units	0.01

d. Confirmed.

e. The empirical measures would be the weights provided in the response to part c. above.

[4] *See*, Calculating Variabilities for Postmaster Costs, Docket No. RM2022-8, July 7, 2022 at 36.

f. The existence of non-volume related determinants of WSCs was explained in the Bradley Study:[5]

> Post offices also receive network-based credits arising from the provision of delivery services through a variety of channels. These credits are network-based because they depend upon the number of points of delivery of different types that the post office serves. That is, the number of the credits is based upon the count of delivery points, not the volumes that go to those points. The credit is the same per delivery whether it is a high-volume delivery, a low-volume delivery, or even a zero-volume delivery.

It is not clear what the question means by the phrase "significantly influence the WSC calculation," but it appears likely that non-volume factors are material in calculating a post office's overall level of WSCs. The Postal Service's best estimate is that the variability is likely to be less than fully proportional, but currently has no reliable basis to determine exactly how much less than fully proportional.

g. Not Confirmed. As explained in the response to parts a. and b. above, there is no existing measure of Postmaster volume. A description of the efforts required to produce such a database is provided in that response. Without implementing a feasibility study, it is not possible to provide a reliable estimate of such a study's time requirement and costs, but to meet Commission standards, it would be likely to take several years and cost hundreds of thousands, if not millions of dollars.

---

[5] *Id*. at 35.

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

2. The Bradley Study states that "[i]n the established approach to calculating variabilities, the change in the cost driver for any subunit is proportional to the overall change: $\varepsilon_{WSCi,WSC} = 1$." Bradley Study at 13. Please confirm that the Postal Service has operational (or any other) evidence that the change in WSCs for an individual Post Office will be proportional to the overall change.

a. If confirmed, please identify and fully explain the relevance of such evidence. In your response, please explain how the analysis would be impacted if this assumption were relaxed.

b. If not confirmed, please explain which evidence would need to be developed and quantify the time and cost associated with such development.

RESPONSE:

a. Please note that the cited assumption is not required for calculating the variability under the Commission's MEDBPAC approach. It is only used in the demonstration that that approach is consistent, theoretically, with the established approach to calculating variabilities.[6] As a result, there is no need to produce empirical evidence relating to the assumption in order to implement the MEDBPAC algorithm, and the Postmaster variability analysis is not impacted by the assumption.

Moreover, it does not seem feasible to produce empirical evidence on this assumption for any reasonable amount of time and/or cost. The assumption can be rewritten as follows:

$$\frac{\partial WSC_i}{WSC_i} = \frac{\partial WSC}{WSC}.$$

[6] Because the assumption is already in the established methodology, it would seem appropriate to incorporate it in an analysis comparing the MEDBPAC approach to the established methodology.

In other words, the assumption is that a marginal (very small) change in national WSCs would not have any distributional effects, by itself, on the WSCs at individual post offices. The very small change in national WSCs would be reflected proportionally in the WSCs across post offices. Note that this assumption does not require the actual distribution of WSCs across post office to remain constant. That distribution does change, for a variety of reasons, like changes in delivery points by region, or adjustments in the flow of mail across the country. Instead, the assumption relates to how a theoretical marginal change in national WSCs relates to the calculation of an overall volume variability. That is, in that calculation, a very small change in national WSCs, holding everything else constant, does not affect the distribution of WSCs across post offices, so an office's proportion of national WSCs is not affect by this small WSC change.

A simple numerical example illustrates the assumption. Suppose there were just three post offices in the national network and the total WSCs, nationwide, were 6,000. Further suppose the network was such that 50 percent of the WSCs occurred at the largest office, 33.3 percent of the WSCs occurred at the medium office, and 16.7 percent of the WSCs occurred at the smallest office. This situation is illustrated by the upper panels in the following table.

Now, suppose there was a one one-hundredth of a percent increase in national WSC, which would be an increase in 0.6 WSCs. Under this assumption, the WSCs at the large office would increase by 0.3, the WSCs at the medium office would increase by 0.2, and WSCs would increase at the small office by 0.1. This is illustrated by the

lower panel in the following table. Because nothing else is happening in the network, the nationwide increase in WSCs has a proportional impact on all three offices. It is worth emphasizing that this approach is not assuming that WSCs actually increase in this way in the actual network. As discussed above, WSCs will change at individual offices for a variety of reasons, and the observed increase in national WSCs will simply be the sum of those changes. That observed outcome is very different from describing, theoretically, how the network would respond to a marginal WSC change at the national level when calculating a variability.

Prior to Marginal Change		
	WCS	**Proportion**
Office 1	1,000.0	16.7%
Office 2	2,000.0	33.3%
Office 3	3,000.0	50.0%
Total	6,000.0	100.0%
After Marginal Change		
	WCS	**Proportion**
Office 1	1,000.1	16.7%
Office 2	2,000.2	33.3%
Office 3	3,000.3	50.0%
Total	6,000.6	100.0%

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

The Postal Service is not aware of any data that would support testing this assumption, making it difficult to produce the requested empirical evidence.

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

3. The Bradley Study states that "[t]he February 2022 data were extracted and the resulting data set includes 13,592 post offices." *Id.* at 14.

a. Please confirm that the referenced February 2022 data represents a snapshot of all post offices, their Executive Administrative Schedule (EAS) grades, and their WSCs at the month-end of February 2022. If not confirmed, please describe the nature of the February 2022 data.

b. Please explain the frequency of variation in EAS grading and WSCs. In your response, please explain how often EAC gradings are changed and how often throughout the year WSCs are awarded.

c. Please explain, if Proposal Two is approved, how often the Postal Service asserts that the underlying data for Proposal Two should be re-extracted and analyzed to re-estimate Postmaster cost variabilities.

d. Please explain what the effect of the COVID-19 pandemic, if any, had on the EAC grading and WSC awarding methodologies and distributions.

e. Please confirm that the Postal Service takes the position that February 2022 data would be representative of the typical distributions of EAC gradings and WSCs and that these distributions do not fluctuate seasonally throughout the year in a meaningful way.

i. If confirmed, please explain.

ii. If not confirmed, please provide a more appropriate time period selection upon which to base variability calculations and explain.

RESPONSE:

a. Confirmed.

b. The Work Service Credits for a post office are calculated when the post office becomes vacant, or at least once every three years. They can also be recalculated if the office's Postmaster thinks the workload has changed sufficiently that the office's EAS grade might change. The variation in WSCs and EAS grades is negligible through time. This was demonstrated in Docket No. RM2020-2:[7]

[7] *See*, Response of the United States Postal Service to Chairman's Information Request No. 1, Docket No. RM2020-2, January 2, 2020 at Question 5.

> The computation of variability is based solely on the April 2019 data because the data used to estimate the logistic models are cross-sectional in nature. The variation in WSC and EAS grades occurs across post offices, but only to a negligible extent through time. There is virtually no change in the number of Postmasters or EAS grades on a month-to-month basis, so adding additional months would essentially be just repeating the same observations and would not be adding any additional information to the estimation.
>
> The lack of monthly variation in WSCs and EAS grades is also demonstrated on page 41 of the Bradley Report that showed that the change in the number of Postmasters in the EAS system over a full year (April 2018 to April 2019) was only seven out of over 13,000. This means that the average monthly change is less than one Postmaster.

c. Because there is little change in WSCs and EAS grades through time, there is little gain from regularly extracting WSC data and re-estimating the logit models. This is supported by the fact presented in the Bradley Study, in the current docket, that the estimated coefficients from the logit models estimated on 2022 data are little different from the estimated coefficients from the logit models estimated on 2019 data.[8] Unless there is a structural change in the EAS system, regular re-estimation of the logit models is not necessary. However, the Postmaster variabilities also depend on the relative salaries in the EAS grades, so when there are material changes in those relative salaries, it would be appropriate to recalculate the variabilities, using the existing logit models but the new salary structure, to account for the changes in the salaries.

[8] *See*, Calculating Variabilities for Postmaster Costs, Docket No. RM2022-8, July 7, 2022 at 23.

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

d. The COVID-19 pandemic did not have any effect on the EAS grading and WSC awarding methodologies. In terms of distribution, a COVID-19 induced reduction in volume could have affected WSCs through reducing revenue, but any changes were not large enough to affect EAS grades.

e. Confirmed. The variation in WSCs and EAS grades is negligible throughout the year. Seasonal variations in an office's workload are already captured in the office's WSC level.[9]

[9] *Id*. at 36.

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

4. The Bradley Study states that "the modification in the [Supervisory Differential Adjustment (SDA)] resulted in a significant increase in the minimum salaries for Grade 18 and 18B exempt Postmasters." Bradley Study at 25. The Bradley Study further states that "the variabilities for EAS-18 and EAS-18B must be combined. The combined variability is the cost-weighted average of the EAS-18 and EAS-18B variabilities, with the costs being the relative calculated 2022 Form 150 costs for the two grades." *Id.* at 37.

a. Please confirm that the Postal Service could estimate two separate regressions for the SDA and non-SDA EAS-18 to EAS-18B pairs of post offices and for the SDA and non-SDA EAS-18B to EAS-20 pairs of post offices. If not confirmed, please explain.

b. If subpart a. is confirmed, please also confirm that the EAS-18 and EAS-18B combined variability could be calculated in a similar way as described in the Bradley Study reference above as the cost-weighted average of the four sub-variabilities referenced above. If not confirmed, please explain.

c. If subpart a. is confirmed, please also describe the potential advantages and drawbacks of the more granular regression approach referenced in subpart a., and whether this analysis would lead to more accurate cost attributions.

d. If subpart b. is confirmed, please describe the potential advantages and drawbacks of calculating the EAS-18 and EAS-18B combined variability as the cost-weighted average of the four sub-variabilities referenced in subpart b. *See* Bradley Study at 37.

RESPONSE:

a. Yes, it would be possible to run the specified separate regressions. To run the regressions for the SDA EAS-18 to EAS-18B and non-SDA EAS-18 to EAS-18B pairs, one could first divide the EAS-18 post offices into the SDA and non-SDA subsets. The SDA subset of EAS-18 offices then could be combined with the EAS-18B post offices to estimate the first specified regression. Then, the non-SDA subset of EAS-18 offices could be combined with the EAS-18B post offices to estimate the second specified regression. A similar process could be followed for the specified separate EAS-18B to

EAS-20 regressions, in which the EAS-18B post offices would be split into the SDA and non-SDA subsets.

b. Yes, the cost weighting approach could be applied to the four different variabilities.

c. EAS-18 SDA offices differ from EAS-18 non-SDA offices only in the salary that is applied to them, not in the way WSCs are calculated, or in the width of their WSC band, or in the amount of WSCs required to move to the EAS-18B grade. If there are no differences in the relationship between WSCs and EAS grades for SDA and non-SDA offices, then there is no advantage to estimating separate regressions. In this circumstance, the separate estimated logit models will produce WSC coefficients similar to the one from the combined equation, but they will be less precisely estimated because of the reduced size in the estimation datasets. For example, the EAS-18 to EAS-18B regression includes 7,226 post offices, but the EAS-18 non-SDA to EAS-18B regression would include only 2,809 post offices.

Moreover, the motivation for estimating separate SDA and non-SDA regressions must come from a belief that the two types of offices are different in their relationship between WSCs and EAS grades. But such a belief is potentially inconsistent with the specified regressions. Consider the possible EAS-18 non-SDA to EAS-18B regression. The estimation data set is a combination of non-SDA EAS-18 post offices and both SDA and non-SDA EAS-18B post offices. It thus mixes the two types of offices in the

separate regression that is attempting to segregate offices by SDA type. This potential inconsistency could be remedied by estimating a non-SDA EAS-18 to non-SDA EAS18-B regression and an SDA EAS-18 to SDA EAS18-B regression, but this approach limits the sizes of the estimation datasets even more.

d. Combining the four sub-variabilities, instead of combining the two variabilities, would be advantageous or non-advantageous depending upon whether or not the four sub-variabilities were more accurate than the two variabilities. As discussed in the response to part c. above, there are no reasons to believe the four sub-variabilities would be more accurate, so it is unlikely that combining them would provide a more accurate overall EAS-18 variability.

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO CHAIRMAN'S INFORMATION REQUEST NO. 1

5. The Bradley Study states that "[t]he LSVPTV approach also requires assuming that there is an infinite number of post offices, which may not be too troublesome of an assumption for the EAS-18 to EAS-18B variability, where there [are] 8,648 post offices, but is a real issue for other variability calculations where there are far fewer post offices in the two EAS grades." *Id.* at 10.

a. Please explain in what way the assumption of an infinite number of post offices is not "troublesome" for calculating variabilities between grades where there are many post offices but presents "a real issue" for variability calculations between grades with fewer post offices.

b. Please explain how many post offices would be needed in both grades in order for the referenced assumption to be valid and produce statistically reliable results.

RESPONSE:

a. The Commission's description of the LSVPTV approach states:[10]

> [T]he Commission calculates the limit value of the proposed variability, when the sample size tends to infinity. To compute this limit, the proposed variability is first given a form that is suitable to the calculation of its limit when the sample size tends to infinity.

It also states:[11]

> The next stage is to compute the large-sample version of the variability by letting the sample size grow to infinity.

These descriptions appear to describe a method that derives a formula that depends upon letting the number of post offices involved grow to infinity, which can be

[10] *See,* File A5: Suggested Approaches to Address the Shortcomings of Proposal Ten, Library Reference (Suggested Approaches), PRC-LR-RM2020-2/5, Docket No. RM2020-2, July 9, 2021 at 2.

[11] *Id*. at 6.

considered to be a very large (in fact uncountable) number. In an EAS grade pair with just a small number of offices it would be considered a strong assumption that offices in that grade would somehow "tend to" or grow to a very large number of offices. On the other hand, if an EAS grade pair has many thousands of offices, the assumption that this number of offices would grow to a very large number would seem more reasonable.

b. The description of the LSVPTV method appears to be utilizing this assumption in order to apply the mathematics of a continuous probability distribution. Consequently, the issue of statistical reliability does not appear to be addressed or discussed anywhere in its description.